

CLAIMS

1. Reactive oxygen-detecting and/or -absorbing compound,
characterised in that

5 it is constituted by a molecular complex which comprises a
copper derivative (1)/ligand (2) and which irreversibly
changes colour following a variation of the extent of
oxidation of the copper and which is connected to the surface
of a solid support (3) by means of a covalent bond.

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2. Reactive compound according to claim 1,
characterised in that

the molecular complex is connected to the surface of the
support by means of a derivative (4) of an organic linking
15 chain which comprises, on the one hand, a first function or
grafting function which allows it to be fixed to the support
and, on the other hand, a second function, or co-ordination
function, which is suitable for bringing about coupling with
an associated molecular condensation entity in order to form
20 the ligand which allows the complexing of the copper
derivative.

3. Reactive compound according to claim 2,
characterised in that

25 the ligand comprises a heteroatomic chain which may or may
not be substituted and which comprises two conjugated imine
functional groups and in which at least two atoms of nitrogen,
one of which belongs to a pyridine core or the like, are
separated by two atoms of carbon.

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4. Reactive compound according to claim 3,
characterised in that

the co-ordination function of the organic linking chain is an amine function.

5 5. Reactive compound according to either claim 3 or claim 4, characterised in that the molecular condensation entity is constituted by 2-pyridine carboxaldehyde, or 2-pyridine carboxylic acid or the chloride thereof.

10 6. Reactive compound according to any one of claims 1 to 5, characterised in that the copper derivative is constituted by CuCl, or $[\text{Cu}(\text{CH}_3\text{CN})_4][\text{PF}_6]$.

15 7. Reactive compound according to any one of claims 1 to 6, characterised in that the support is an organic polymer support, such as polystyrene balls or a co-polymer based on polystyrene, and the grafting function of the organic linking chain is an
20 alkene function.

8. Reactive compound according to claim 7, characterised in that the balls which constitute the support are balls of
25 functional polystyrene which have one or more primary amine functions and/or one or more secondary amine functions.

9. Reactive compound according to any one of claims 1 to 6, characterised in that
30 the support is a mineral support, such as balls of a mineral glass, and the grafting function of the organic linking chain is, for example, a trialkoxysilane function, in particular a trimethoxysilane function.

10. Reactive compound according to claim 9,
characterised in that
the organic chain is selected from the group formed by 3-aminopropyltrimethoxysilane, N-[3-(trimethoxysilyl)propyl]-
5 ethylenediamine and 3-(2-(2-amino)ethylamino)propyl-trimethoxysilane.
11. Reactive compound according to either claim 9 or claim 10,
characterised in that
10 the support is constituted by an activated metal oxide such as TiO₂, ZrO₂ or preferably SiO₂ or Al₂O₃.
12. Method for preparing a reactive compound according to any one of claims 9 to 11, in which the support is a mineral
15 support, characterised in that
it comprises the following steps:
- activating the support by means of immersion in an acid solution, washing operations, then air-drying,
- grafting the organic chain to the activated support by
20 means of immersion in ethanol at ambient temperature,
- synthesis of the ligand in situ by adding the molecular condensation entity to the organic chain previously grafted to the support which may or may not have been activated at ambient temperature and in an ethanol medium,
25 and
- co-ordinating the copper derivative on the ligand by means of immersion in a solution of ethanol at ambient temperature in an inert atmosphere.
- 30 13. Oxygen-detecting and/or -absorbing device,
characterised in that
it comprises a reactive compound according to any one of claims 1 to 12.